

Serial No. 10/808,814

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**REMARKS/ARGUMENTS**

Claims 1-33 are pending in this application. Claims 34-38 are hereby canceled. Claims 7, 9, 11 and 26 are amended to correct typographic errors and/or to correct an inadvertent error in claim language to reflect a proper Markush group.

***Claim Rejections - 35 USC § 112***

The rejection of claims 7-11, 22, 24, 25 and 26 under 35 U.S.C. 112, second paragraph, as being indefinite due to improper Markush group claim language has been corrected in the amendment to claim 7.

The rejection of claims 34-38 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention has been obviated in that claims 34-38 are hereby canceled.

***Claim Rejections - 35 USC § 102***

The rejection of claims 1, 7, 12-16, 22, and 27-28 under 35 U.S.C. §102(b) as being anticipated by Pechold (U.S. Patent No. 5,356,689) is respectfully traversed.

Pechold '689 discloses stain resistant compositions and processes for using them for treating polyamide substrates (column 2 lines 14-17). In particular, Pechold '689 discloses a stain-resist composition which contains methacrylic acid polymer with a water-dispersed epoxy resin (column 2 lines 19-25). At Col. 4, beginning at line 4, Pechold states, "The water-dispersible epoxy resins useful for the purposes of this invention include any water-soluble or emulsifiable epoxy compounds containing two or more epoxy groups".

However, Pechold '689 nowhere discloses, as recited in claim 1:

a crosslinking agent comprising at least one  
polymer having *at least two hydroxyl groups* (emphasis added)

The crosslinking agent taught by Pechold '689 is epoxy resin (column 2 lines 26-32), and the general structures of the epoxy resins useful for the invention set forth in Pechold '689 are shown in Col. 4, Formulas I, II, and III. None of them indicates having two or more hydroxyl groups (column 4 lines 31-49). In reference to Formulas I, II and III, Pechold '689 states at Col. 4, line 52, "All of these polyepoxides contain at least two vic-epoxy groups in which the epoxy oxygen atom is attached to adjacent carbon atoms and have molecular weights of about

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160 – 1000". Thus, there is no suggestion of having two or more hydroxyl groups in the chemical structure of the crosslinking agents, and for that reason the composition of the claimed invention is distinguishable from those compositions disclosed by Pechold '689.

Similarly, Pechold '689 does not teach a process for imparting to a polyamide substrate resistance to staining using a composition containing at least two hydroxyl groups as defined in Applicant's claim 16. Claims 7, 12-15, and 27-28 are dependent upon claim 1 or claim 16. Thus, it is respectfully submitted that Pechold '689 does not disclose, anticipate or inherently teach the material limitations of the claimed invention, and the instant rejection under 35 U.S.C. §102(b) should be withdrawn. Favorable reconsideration is respectfully requested.

***Claim Rejections - 35 USC § 103***

The rejection of claims 8 and 23 under 35 U.S.C. §103(a) as being unpatentable over Pechold (U.S. Patent No. 5,356,689) in view of Elgarhy (U.S. Patent No. 6,207,594) is respectfully traversed.

The relevance of Pechold '689 has been discussed above. Pechold '689 does not anticipate the material limitations of the instant claims, and, furthermore, its teachings as to epoxy resins useful for imparting stain resistance to acid dyes is limited to water-dispersible epoxy resins containing two or more epoxy groups. Note particularly the statement in Pechold '689 at Col. 4, lines 61 – 64, as to polyepoxides in that "one should generally use commercial epoxy resins based on bisphenol A, novolacs, epichlorohydrin, glycidyl acrylate, glycidyl methacrylate or related materials." There is no suggestion in Pechold '689 to use an epoxy crosslinking agent having *at least two hydroxyl groups*, and such a suggestion should not be inferred absent a clear teaching or suggestion as to hydroxyl groups. Furthermore, Pechold '689 is silent as to the molecular weight of the polymethacrylic acids and does not explicitly teach the claimed molecular weight of 300,000 or greater.

Elgarhy, the secondary reference, teaches the use of a combination of methacrylic acid polymer with partially sulfonated resol resin for a wet cleaning process (column 2, line 66 to column 3, line 5). Elgarhy discloses suitable methacrylic acid polymers with high *weight* average molecular weights of 100,000 to 500,000 (column 3 lines 32-35). However, the polymethacrylic acid defined in Applicant's claim 8 and claim 23 has a *number* average molecular weight of at least 300,000. Generally, for a high molecular weight polymer, the ratio of weight average molecular weight to number average molecular weight is about 2

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(*Textbook of Polymer Science*, page 68, A Wiley-Interscience publication). In other words, the methacrylic acid polymer disclosed by Elgarhy actually has a number average molecular weight of 50,000 to 250,000, which is much less than 300,000 that is required for the claimed invention. In fact, referring to Col. 3, line 36, of the reference, Elgarhy expresses a preference for a number average molecular weight of from 60,000 to 75,000, which is significantly below Applicant's claimed lower limit. Thus, the number average molecular weight of polymethacrylic acid of claims 8 and 23 is totally different from that disclosed by Elgarhy, and there is nothing in the record, absent impermissible hindsight, to suggest that one of ordinary skill in the art would have been motivated to combine the teachings of the two references.

In view of the foregoing remarks, reconsideration and withdrawal of the instant rejection is respectfully requested.

The rejection of claims 2-4, 6, 9-11, 17-20 and 24-26 under 35 U.S.C. §103(a) as being unpatentable over Pechold (U.S. Patent No. 5,707,708) in view of Flat et al. (U.S. Patent No. 5,993,965) is respectfully traversed.

Applicant assumes that the instant rejection of the subject dependent claims under 35 U.S.C. §103(a) is based, in part, on Pechold (U.S. Patent No. 5,356,689). Pechold '689 has been discussed above, and those comments will not be repeated her.

Claims 2-4, 6, and 9-11 depend directly or indirectly from claim 1, and claims 17-20 and 24-26 depend directly or indirectly from claim 16. The instant invention as defined by claims 1 and 16 relates to a stain-resist composition whose patentability is based on the presence of a crosslinking agent comprising at least one polymer, e.g., a polybutadiene, having at least two hydroxyl groups. Although Pechold '708 teaches a new composition of alpha-olefin/maleic anhydride polymer which can impart stain-resistance to polyamide fibrous substrates (Abstract), Pechold '708 nowhere discloses or suggests use of a crosslinking agent comprising at least one polymer having *at least two hydroxyl groups* (emphasis added)

Pechold '708, therefore is not an effective primary reference to support a rejection of dependent claims 2-4, 6, 9-11, 17-20 and 24-26 under 35 U.S.C. §103(a). As noted by the Examiner, Pechold '708 does not teach stain resist compositions and methods comprising epoxidized hydroxyl terminated polybutadienes with one vinyl group. Even if one were to modify the stain resist compositions taught by Pechold '708 by incorporating the fiber

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treatments taught by Flat et al., one still does not close the gap in making Applicant's claim-defined invention obvious.

Flat et al. is directed to protection of fibers, particularly glass fibers from the effects of the exterior environment (water, heat, dust, mechanical effects, etc.) by depositing onto the fibers a photopolymerizable coating composition, i.e., a hydrophobic material, which adheres, i.e., "shows excellent adhesion" (Col. 3, line 29) to the fibers. Crosslinking *within the composition* is effected by cationic photopolymerization (Col. 1, line 57). In contrast, patentability of the instant invention is based the crosslinking agents being able to covalently bind the stain-resist agents to the polyamide fibers, and without the need for photopolymerization. The composition of Flat et al. is a "hydrophobic material" (Col. 2, line 12), and its function in forming a protective coating on fibers via photopolymerization is different from the result obtained according to the instant invention. The crosslinker of Flat et al. is present in the composition for a different result.

It would not have been obvious to one of ordinary skill in the art to modify the stain resist compositions taught by either of the Pechold references as taught by Flat et al. because Flat does not teach or suggest the effectiveness of polybutadienes in being able to covalently bind the stain resistant agents to the polyamide fibers. Furthermore, Pechold '708 by itself is not an effective primary reference to support a rejection of dependent claims 2-4, 6, 9-11, 17-20 and 24-26 under 35 U.S.C. §103(a). Reconsideration and withdrawal of the instant rejection is respectfully requested.

#### CONCLUSION

This is meant to be a complete response to the Office Action mailed on February 7, 2006. Applicant respectfully submits that each and every rejection of the claims, as now pending, has been overcome, and that such claims are now in a condition for allowance. Favorable action is respectfully requested.

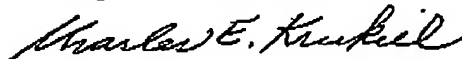
Should the Examiner have any questions regarding this Amendment, or the remarks contained herein, Applicant's attorney would welcome the opportunity to discuss such matters with the Examiner. Applicant believes no extra fees are due with this request.

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However, if additional fees are required, please charge or credit the balance to Deposit Account 50-3223 (Invista North America S.à r.l.).

Respectfully submitted,

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